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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,252	12/12/2003	Bin-Yen Yang	JCLA10634	9803

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EXAMINER

BOYKIN, TERRESSA M

ART UNIT

PAPER NUMBER

1711

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/735,252	YANG ET AL.	
	Examiner	Art Unit	
	Terressa M. Boykin	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**Priority**

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-16,18 are rejected under 35 U.S.C. 102(b) as being anticipated by **US 4617343**.

Applicants' claims are directed to an emulsion type adhesive applicable for over-laminating films wherein the adhesive comprises a). an alkyl acrylate having 4-12 carbon atoms b). an acyl acrylate having 1-3 carbon atoms c). a dicarboxylic c acid d) a reactive surfactant e). an organic acid vinyl ester and f). soft water.

\*It is noted that the Examiner is interpreting the claimed "emulsion *type* adhesive" as being an adhesive emulsion.

**US 4617343** discloses a pressure sensitive adhesive compositions suitable for use in laminating applications, particularly those over laminating applications wherein at least one of the surfaces to be laminated is a printed surface.

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With regard to applicants' claim 1, the reference discloses that the monomers useful for formulating the adhesives of the reference are carefully selected to ensure the production of a polymer having a Tg of -60 to -20 C., preferably -50 to -35 C. Additionally, the polymer is tailored to contain a specific combination of monomers within predetermined monomeric ranges, the polymer consisting essentially of:

- (a) at least 40%, preferably at least 70%, by weight of an acrylic or methacrylic acid ester monomer containing 4 to 12 carbon atoms or mixture of such esters;
- (b) from 12 to 40%, preferably 15 to 20%, of a water miscible vinyl ester of an aliphatic acid containing 1 to 13 carbon atoms;
- (c) from 1 to 10%, preferably 2 to 5%, of a monoethylenically unsaturated mono- or dicarboxylic acid containing 2 to 5 carbon atoms or the hydroxyalkyl (C2 -C4) esters thereof;
- (d) from 0.75 to 10%, preferably 1 to 3%, of a polymerizable surfactant;
- (e) from 0 to 19%, preferably 0 to 5%, of a half ester or salt of an ethylenically unsaturated acid containing 2 to 8 carbon atoms in the ester portion thereof, wherein the total of components (c) and (e) are less than 20% by weight of the total polymer; and
- (f) from 0 to 20%, preferably 0 to 5%, of other copolymerizable monomers; wherein the adhesive polymer emulsion is characterized by its ability to be diluted with at least 15 parts alcohol per 100 parts wet emulsion.

Note further in Example 1 that 400 grams of distilled water are employed in the process which would anticipate applicants' soft water.

Further the oxidizing and reducing agents are also described therein. Note that the reference states that the free radical donors used to initiate the copolymerization can be selected from any of the initiators for aqueous emulsion copolymerization known in the art including those which undergo scission under

the influence of heat and those which are caused to form free radicals by reaction with reducing agents. Water-soluble initiators are usually to be preferred including potassium persulfate, ammonium peroxydiphosphate, hydrogen peroxide and others which will be known to those skilled in the art.

When reducing agents are used, it is preferred to use water soluble materials such as sodium formaldehyde sulfoxylate, sodium metabisulfite and ascorbic acid. The amounts to be used depend upon the desired rate of polymerization and upon other factors well known in the art. Preferably the aqueous emulsion composition contains between about 0.1 and 10 percent, especially from about 0.2 to 2 percent by weight of initiator. If a reducing agent is used, it also is used in amount totaling between about 0.1 and 5 percent, especially from 0.2 to 2 percent by weight of the finished emulsion. Those skilled in the art will recognize that the amount of initiator used may vary depending upon the particular initiator employed as well as the molecular weight of the polymer desired. Generally the use of higher initiator levels results in polymers of lower molecular weight, and vice-versa.

With regard to applicants' claims 3, 4, 5, 6, and 7 note that the reference states that with respect to the vinyl ester component, certain minimum levels of monoethylenically unsaturated mono- or dicarboxylic acids or hydroxyalkyl esters thereof, generally in the order of at least about 1%, preferably at least about 2%, must be present in the composition in order to achieve the required alcohol tolerance levels. The specific amount of the acidic component required is

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generally inversely related to the amount of polymerizable surfactant used in the emulsion polymer. The preferred acids are acrylic acid and methacrylic acid, but other copolymerizable acids such as crotonic acid, itaconic acid, maleic acid, and fumaric acid can also be employed. The preferred hydroxyalkyl esters are hydroxyalkyl esters of acrylic acid, methacrylic acid, and other alpha-beta ethylenically unsaturated carboxylic acids. Examples include 3-hydroxyethyl acrylate 2-hydroxypropyl acrylate, 3-hydroxypropyl acrylate, 3-hydroxyethyl methacrylate 2-hydroxypropyl methacrylate, 3-hydroxypropyl methacrylate, 4-hydroxybutyl methacrylate, and corresponding esters of other unsaturated acids. There may also be employed mono- or di-esters of unsaturated dicarboxylic acids such as maleic acid, fumaric acid, and itaconic acid in which at least one of the esterifying groups contains a hydroxyl group. Examples of such esters include: mono(2-hydroxyethyl)maleate; mono-(2-hydroxyethyl) fumarate; bis(2-hydroxyethyl)maleate; mono-(2-hydroxypropyl) maleate; bis(2-hydroxyethyl)itaconate; mono-(2-hydroxyethyl)itaconate, bis(2-hydroxyethyl)itaconate; and 2-hydroxyethylbutyl maleate.

With regard to applicants' claims 9, 10, 11, 12, 13, note that reference at Examples II and III. Further, as noted previously, illustrative of acrylic and methacrylic acid esters suitable in the reference are n-butyl acrylate, 2-ethylhexyl acrylate isobutyl acrylate, ethyl acrylate, methyl methacrylate, n-propyl acrylate, isopropyl acrylate, pentyl acrylate and the like.

With regard to applicants' claim 14 as noted previously, there may also be

employed mono- or di-esters of unsaturated dicarboxylic acids such as maleic acid, fumaric acid, and itaconic acid in which at least one of the esterifying groups contains a hydroxyl group. Examples of such esters include: mono(2-hydroxyethyl) maleate; mono-(2-hydroxyethyl) fumarate; bis(2-hydroxyethyl) maleate; mono-(2-hydroxypropyl) maleate; bis(2-hydroxyethyl) itaconate; mono-(2-hydroxyethyl) itaconate, bis(2-hydroxyethyl) itaconate; and 2-hydroxyethylbutyl maleate.

With regard to applicants' claim 15, note the reference discloses that the polymerizable surfactant utilized in the preparation of the adhesive compositions of the invention may be any of the available polymerizable surfactants, i.e. those surfactant containing moieties capable of entering into the polymerization reaction. Exemplary of the polymerizable surfactants used herein are the vinyl-reactive surfactants comprising the esters of acrylic, methacrylic and crotonic acids and the mono- and di-esters of maleic, fumaric, itaconic and aconitic acids with (a) C<sub>8</sub>-C<sub>20</sub> alkyl phenoxy (ethleneyoxy)10-60 ethyl alcohols, (b) (ethyleneoxy) 15-25 sorbitan esters of C<sub>12</sub>-C<sub>20</sub> fatty acids and (c) methyl cellulose, hydroxyethyl cellulose, and hydroxymethyl cellulose and polyvinyl alcohol.

With regard to applicants' claims 8 and 16 note that the illustrative of suitable vinyl esters are vinyl acetate, vinyl propionate, vinyl butyrate, vinyl versatate, and the like. The amount of the vinyl ester employed has been found to be critical in obtaining the required degree of alcohol tolerance with adhesive compositions

containing less than about 12% by weight of the vinyl ester not tolerating the minimum amount of alcohol required to achieve wetting of the substrate surfaces.

With regard to applicants' claim 18, as noted above, the reference is directed to pressure sensitive adhesive compositions suitable for use in laminating applications, particularly those over laminating applications wherein at least one of the surfaces to be laminated is a printed surface. The adhesives of the invention are prepared by conventional emulsion polymerization techniques using polymerizable surfactants; consequently, the resultant adhesives contain little or no free surfactant which may, after laminating, cause blurring or discoloration of the ink on the printed surfaces. The adhesives are further characterized by superior alcohol tolerance thereby permitting dilution with sufficient alcohol to provide wetting of the surface to be coated while requiring no further addition of external surfactant.

Thus the reference discloses an adhesive emulsion composition prepared from the same components as claimed by applicants. Thus in view of the above, there appears to be no significant difference between the reference US 4617343 and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

### **35 USC 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over **USP 4617343** in view of **USP 3705164** see abstract, col. 2 lines 5 through col. 4 line 60 and claims.

Applicants' claims are directed to an emulsion type adhesive applicable for over-laminating films wherein the adhesive comprises a). an alkyl acrylate having 4-12 carbon atoms b). an acyl acrylate having 1-3 carbon atoms c). a dicarboxylic acid d). a reactive surfactant e). an organic acid vinyl ester and f). soft water.

\*It is noted that the Examiner is interpreting the claimed "emulsion type adhesive" as being an adhesive emulsion.

With regard to applicants' claim 17, the reference **US 4617343** discloses the above adhesive emulsion which uses oxidizing and reducing agents during its process except for the particular agents as noted in applicants' claim 17 wherein the oxidizing agent is t-butyl peroxide and the reducing agent is Rongalite.

Nevertheless, **US 3705164** which discloses a process for the production of modified anionic emulsion polymers further discloses the use of such oxidizing and reducing agents. Note that the reference states that any suitable polymerization catalysts may be used including inorganic peroxidic compounds such as potassium or ammonium persulphate, hydrogen peroxide or percarbonates; organic peroxidic compounds, such as acyl peroxides including, for example, benzoyl peroxide, alkyl hydroperoxides, such as tert-butyl hydroperoxide, cumene hydroperoxide and p-menthane hydroperoxide; dialkyl

peroxides such as di-tert-butyl peroxide; peroxy esters such as tert-butyl perbenzoate and the like and mixtures thereof. The inorganic peroxidic compounds are advantageously used in combination with any suitable reducing agents known per se including sodium pyrosulphite or bisulphite, sodium formaldehyde sulfoxylate, triethanolamine, tetraethylene pentamine and the like. Also azo compounds such as azoisobutyronitril, azoisobutyric acid ethylester, azoisobutyroamidine, 4,4'-azo- 4-cyano-valerianic acid and the like are particularly suitable. The initiators which decompose into radicals may be used alone or in combination with reducing agents or heavy metal compounds. Sodium pyrosulphite, potassium pyrosulphite, formic acid, ascorbic acid, hydrazine derivatives, amine derivatives and Rongalite are examples of reducing agents.

Consequently, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ both the particular oxidizing and reducing agents in the process as noted in the reference since the reference states that various oxidizing and reducing agent may be used at the discretion of the skilled artisan (**USP 4617343** col. 5 lines 35-40 and lines 52-59.) Further, the reference **USP 3705164** discloses why such agents would be beneficial for use in emulsion processes. See col. 4 line 56 through col. 5 line 13. note the preferred initiator systems are those anticipated by applicants' claimed agents. See col. 5 lines 22-30. Further, it should be noted that neither applicants' specification, examples or claims indicate that the particular agents as described in claim 17 render the composition any unexpected or unobvious results.

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**Correspondence**


Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is ( **571-272-1700**).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb

  
Examiner Terressa Boykin  
Primary Examiner  
Art Unit 1711